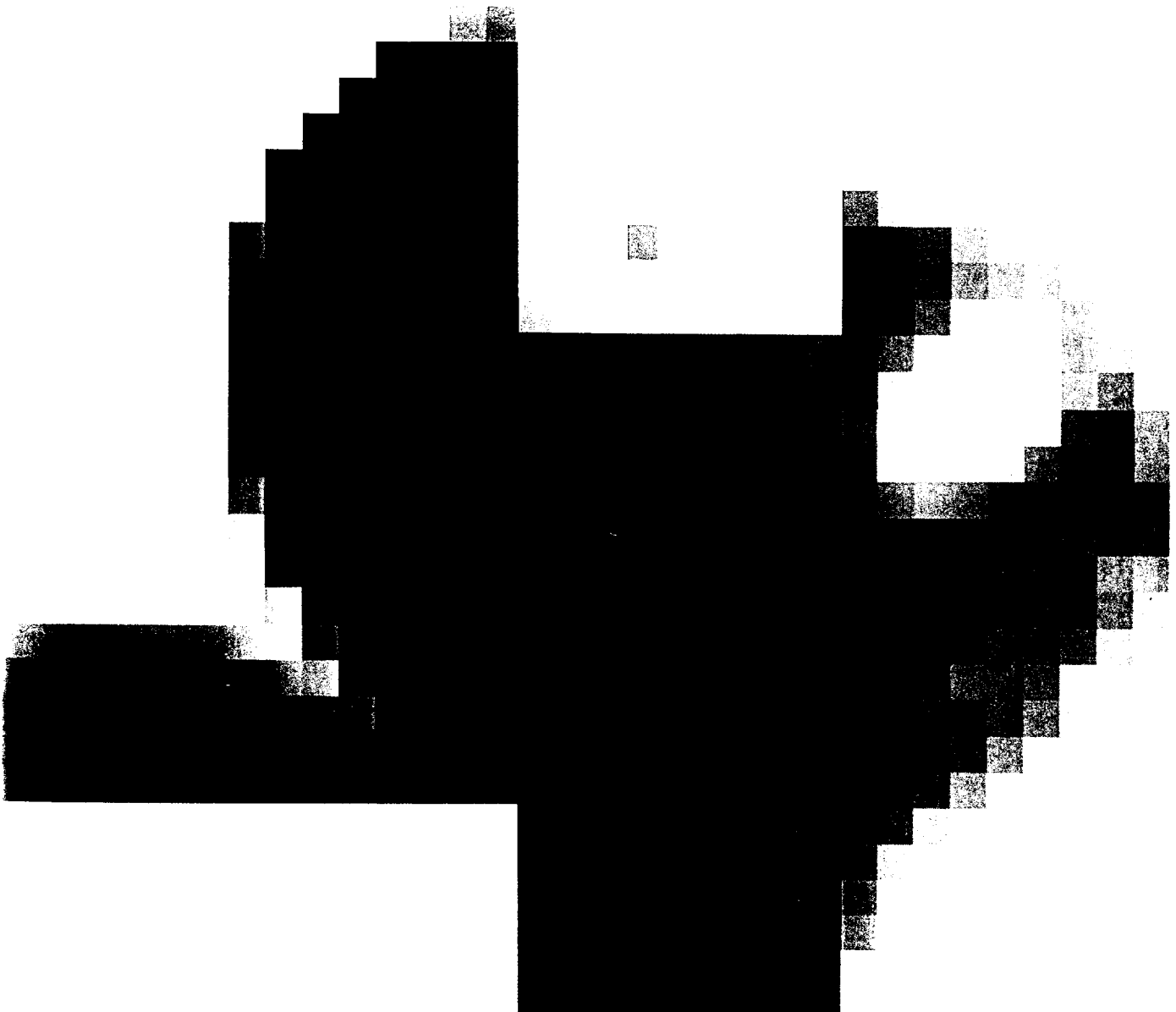


A Booz Allen & Hamilton Report  
to the  
New York City Partnership

*Sam 281*

# High-Tech New York

Strengthening New York as a World City





**A Nobel Prize-winning geneticist, Dr. Joshua Lederberg is president of The Rockefeller University, chairman of the New York City Partnership's High Technology Committee, and a member of the Partnership's board of directors. He received his BA from Columbia University and his PhD from Yale.**

**Prior to joining The Rockefeller, Dr. Lederberg was associated with both the University of Wisconsin and the Stanford University School of Medicine, where he spent almost 20 years. Today, as president of one of the world's leading biomedical research centers, Dr. Lederberg presides over a research community of some 1,400 scientists, technicians, and support staff; manages an annual operating budget of \$70 million; and sees his institution as an integral contributor to the economic diversity of New York City.**

Institutions like The Rockefeller University are inextricably intertwined in their operations, their mission, and their future with the life of New York City. If New York doesn't thrive, we won't thrive. I also believe that the city's academic and research institutions have important contributions to make to its economic, social, and cultural vitality—and that we're very dependent on the outcome of such collaborative efforts.

Yet, simply because New York is such a unique center of business, finance, and telecommunications—and because our scientific resources are decentralized—many people fail to associate the city with technology or to appreciate its enormously rich scholarly/research community. When I talk about that community's involvement in the city, the reaction of many business executives is, "Do any of your professors really care?" My response is yes—the majority of my colleagues would very much enjoy being involved in helping the city find solutions to the complex problems it faces. Yet these academic experts have little access to information about the economic life of New York and to the raw material they need to exercise their imaginations about the kinds of contributions they can make to its growth.

At the federal level, there are very explicit mechanisms for consultation and many of the city's professors participate in a wide range of projects—whether in health-care policy, defense planning, agricultural issues, industrial development, or technology transfer. But very little of this activity occurs at the municipal level in New York. I'd like to encourage more involvement in this area.

Turning to high technology, I believe that just keeping New York City functional is a very high priority. We have enormous advantages as a world capital—a place that can bring together the intellectual resources of our institutions to focus not only on problems at a municipal level, but also on those problems as they are interwoven with every aspect of international finance, technology policy, technology transfer, and the management of technology in large corporations.

New York, after all, is really the very top of the spinal cord of entire industries. Putting it modestly, the city can continue to justify its central place as a business and financial capital only by having the widest possible array of technological resources readily available. Increasingly, we are operating in a technological world system, and we must bring intellectual input to play in shaping that system. Our academic institutions offer us access to people with deeply specialized skills, skills that could not have been developed in any other environment—and that equip them to make unique contributions.

In making comparisons between New York City and Silicon Valley, I think we should remember that what has dominated the city's economy is not high tech versus low tech, but service versus manufacturing. As it is currently constituted, the city's economy is dominated by service-based businesses; and those services, in turn, generate a demand for technological support. Historically, this service intensity has both justified and been the source of the high cost of doing business in New York. It is imperative that we stress this as the basis of the city's real strengths: This is the proper conceptual framework for integrating the city's high-tech resources into its overall economy and we need to address the growth of new industries in the city within this context.

From time to time, I've been approached by many people from different jurisdictional and governmental levels, all of whom expressed concern about the level of biotechnology activity in New York. This is a subject in which I have a fair amount of experience—specifically, the 20 years I spent at Stanford. Based on that experience, I feel that most of the proposals I've seen are

fundamentally untimely and misplaced: They focus on areas in which New York City may not have unique competitive strengths relative to the cost of doing business. The issue has to be turned around and viewed in terms of New York's very special needs and capabilities - the qualities that would enable it to distinguish itself. We should avoid engaging in a futile effort to be a latecomer or imitating what has already been created elsewhere.

With respect to biotechnology, New York might have rivalled California if it had gained a foothold earlier in the industry's development. At this stage, even when it comes to mounting a "me too" effort, we lack special advantages compared to other locales - and the present financial and industrial climate doesn't really offer much encouragement to new entries in biotech. And while I believe there are a number of specific steps the public sector could take to improve the situation vis-à-vis biotechnology, I also think that an analysis of the return the city would receive on its investments is essential.

This raises the whole issue of what is meant by "economic development" in a city like New York. In my view, economic development has two objectives: first, maintaining the efficiency of the city's operations so that it can support a healthy infrastructure and a job scale that ranges up and down the economic ladder. And second, in support of the first objective, economic development involves planning for new programs that will be self-justifying and self-sustaining.

Looking at biotechnology from this perspective, I think there should be some incubator facilities available in New York; but they need be only modest in scale. Once they grow beyond a certain size, the cost disadvantage of expansion may exceed the inefficiencies associated with separating the incubator from production facilities. I almost think of these New York-based facilities as marsupial pouches rather than incubators; they would provide developmental nurturing just after the gestation stage of the fundamental research in our own university laboratories.

I have no doubt that more things would be hatched here more readily if there were facilities in which they could be carried a few steps further before they were transferred to established plants. In my view then, incubational biotechnology work will probably be just a small piece of New York City's high-tech "action." Nevertheless, a little would go a long way in enhancing the efficiency of technology transfer from university labs to industry.

From the institutional point of view, I think we could be doing much more to strengthen the link between our universities and the city's industrial base. We definitely have a different culture here, and it's taking a while for New York's research community to catch up to the possibilities that carefully structured relationships with the business community offer. Issues I took for granted 10 years ago at Stanford - sensitive matters of licensing and so on - are new here. The patterns of historical experience are different.

At the same time, some of the negative statements made about biotechnology in New York are a little off base. Many of the city's academics are indeed consulting with industrial organizations, but the nature of their connection is a little different. Where every other professor in California might leave a university position and start a company, professors in New York choose to act as consultants to established firms while maintaining their university affiliations. One model isn't necessarily more desirable than the other; they're simply different. These two approaches are also converging. And of course, many of these small companies are going up in a puff of smoke.

At the High Technology Committee, we've talked about creating some kind of mechanism for encouraging interchanges between the city's business sector and its universities. While it's premature at this stage to set up formal

structures, I do think it's important that we find ways to make it easier for the people in these communities to meet each other, make friends, and discover challenges of joint interest.

This brings me back to a point I made earlier. Universities are centers of intellectual excellence and specialization. It's not axiomatic that the knowledge they offer can be transferred to issues of business, civic, or national import, but there are innumerable instances in which the economic life of a community can benefit from this specialized knowledge. From this perspective, alerting government officials and executives in the financial and industrial sectors to the resources that the city's universities and research centers have to offer is extremely important; it's perhaps the most important message I'd like to convey.

I see definite possibilities for synergy here, particularly in terms of New York's pivotal role as a center for the collection and distribution of capital. It's hardly possible to have access to too much information or too many resources in determining how to structure major investment decisions. Such decisions often involve very technical questions about the justification for the placement of dollars in this pharmaceutical company, in that electronics firm, or for the development of a new type of software, and so on. This is where I see a strong opportunity for interaction between academic experts, with their specialized knowledge, and the business life of the city, at both the financial and industrial levels. I'd like to encourage the cultivation of more of these relationships and see them work for the benefit of the city and everyone involved.

The Partnership offers a vehicle designed to foster these productive communication links; out of its work will come any number of proposals and creative solutions for building on New York's strengths and bypassing some of the peculiarities that history has burdened us with.

I know that, for myself, the opportunity to rub shoulders, not only with my colleagues but with business leaders and people of influence in other spheres, has enriched my knowledge of what the world is like and how different types of organizations operate. From this perspective, there really is no place like New York.